

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended): A method for mounting a plurality of servo-amplifier modules for driving motors on a multishaft servo-amplifier, each of the plurality of servo-amplifier modules includes an identical shape and an identical function to each other and has semiconductor power elements, comprising:

preparing a multishaft interface substrate, that constitutes a multishaft servo-amplifier function unit for a host controller, as a base plate on which the plurality of multishaft servo-amplifier modules are mounted, wherein each of the plurality of multishaft servo-amplifier modules including a printed board and a semiconductor power element carried on the printed board;

mounting the multishaft servo-amplifier modules on surfaces of the multishaft interface substrate in parallel therewith; and

mounting the multishaft servo-amplifier modules on the both surfaces of the multishaft interface substrate to efficiently mount the plural multishaft servo-amplifier modules on the multishaft interface substrate.

2. (Currently Amended): ~~The method for mounting a plurality multishaft servo-amplifier modules according to claim 1, further comprising:~~

A method for mounting a plurality of servo-amplifier modules for driving motors on a multishaft servo-amplifier, each of the plurality of servo-amplifier modules includes an identical shape and an identical function to each other and has semiconductor power elements, comprising:

preparing a multishaft interface substrate, that constitutes a multishaft servo-amplifier function unit for a host controller, as a base plate on which the plurality of multishaft servo-amplifier modules are mounted;

mounting the multishaft servo-amplifier modules on surfaces of the multishaft interface substrate in parallel therewith;

mounting the multishaft servo-amplifier modules on the both surfaces of the multishaft interface substrate to efficiently mount the plural multishaft servo-amplifier modules on the multishaft interface substrate;

disposing connectors for connecting with the multishaft interface substrate on diagonally facing areas of the multishaft servo-amplifier module, disposing connectors for connecting with the multishaft servo-amplifier module on the both front and rear surfaces of the multishaft interface substrate in a zigzag arrangement, and disposing the plurality of the multishaft servo-amplifier modules alternately on the front and the rear surfaces of the multishaft interface substrate such that the connectors for connecting with the multishaft servo-amplifier module do not interfere with each other; and

mounting the multishaft servo-amplifier modules on the same positions of the both surfaces of the multishaft interface substrate such that the multishaft interface substrate is sandwiched between each pair of the multishaft servo-amplifier modules, and mounting the multishaft servo-amplifier modules on the multishaft interface substrate in a side-by-side arrangement so as to efficiently mount the plural multishaft servo-amplifier modules on the multishaft interface substrate.

3. (Currently Amended): ~~The method for mounting a plurality multishaft servo-amplifier modules according to claim 1, further comprising:~~

A method for mounting a plurality of servo-amplifier modules for driving motors on a multishaft servo-amplifier, each of the plurality of servo-amplifier modules includes an identical shape and an identical function to each other and has semiconductor power elements, comprising:

preparing a multishaft interface substrate, that constitutes a multishaft servo-amplifier function unit for a host controller, as a base plate on which the plurality of multishaft servo-amplifier modules are mounted;

mounting the multishaft servo-amplifier modules on surfaces of the multishaft interface substrate in parallel therewith;

mounting the multishaft servo-amplifier modules on the both surfaces of the multishaft interface substrate to efficiently mount the plural multishaft servo-amplifier modules on the multishaft interface substrate;

forming through holes used for fixation on the multishaft servo-amplifier modules to provide serially connected through holes formed by mounting the servo-amplifier modules on the same positions of the both surfaces of the multishaft interface substrate such that the multishaft interface substrate is sandwiched between each pair of the multishaft servo-amplifier modules;
and

fixing the multishaft servo-amplifier modules to the multishaft interface substrate such that the multishaft interface substrate is sandwiched between the pairs of the multishaft servo-amplifier modules using the serially connected through holes thus formed.

4. (Original): The method for mounting a plurality multishaft servo-amplifier modules according to any one of claims 1 to 3, further comprising:

providing attachment flat surfaces and structures having sufficient degrees of flatness and parallelism and strength for the multishaft servo-amplifier modules such that the multishaft servo-amplifier can be directly attached to and carried on a movable part of a machine with a decreased entire thickness of the multishaft servo-amplifier for the carrying surface of the movable part of the machine.

5. (Withdrawn): A multishaft servo-amplifier comprising:

a multishaft interface substrate; and

a plurality of servo-amplifier modules, each of the plurality of servo-amplifier modules includes semiconductor power elements and drives a motor,

wherein the plurality of multishaft servo-amplifier modules are mounted on front and rear surfaces of the multishaft interface substrate.

6. (Withdrawn): The multishaft servo-amplifier according to claim 5, further comprising:

connectors for connecting with the multishaft interface substrate, disposed on diagonally facing areas of the each of the plurality of servo-amplifier modules; and

connectors, for connecting with the plurality of multishaft servo-amplifier modules, disposed on both front and rear surfaces of the multishaft interface substrate in a zigzag arrangement,

wherein ones of the plurality of the multishaft servo-amplifier modules are disposed on a front surface of the multishaft interface substrate in a side-by-side arrangement, and another of the plurality of the multishaft servo-amplifier modules are disposed on a rear surface of the multishaft interface substrate in a side-by-side arrangement,

each positions where the ones of the plurality of the multishaft servo-amplifier are mounted on the front surface corresponds to each positions where the anothers of the plurality of the multishaft servo-amplifier are mounted on the rear surface, such that the multishaft interface substrate is sandwiched between each pair of the multishaft servo-amplifier modules, and

each positions of the connectors on the front surface does not corresponds to each positions of the connectors on the rear surface.

7. (Withdrawn): The multishaft servo-amplifier according to claim 5, further comprising:

through holes formed on each of the plurality of servo-amplifier modules; and
holes formed on the multishaft interface substrate,

wherein one of the through holes of one of the servo-amplifier modules mounted on the front surface, another of the through holes of another of the servo-amplifier modules mounted on the rear surface and one of holes on the multishaft interface substrate constitute a serially connected through hole.